

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A catalyst suitable for use in the hydrogenation of a hydrogenatable organic compound which consists essentially of a palladium compound supported upon a support material selected from the group consisting of titania, magnesia, alumina, silica-alumina, a calcium-aluminate cement and mixtures thereof and a compound of a lanthanide, wherein the palladium is present at a level in the range of about 50 ppm to about 1% by weight calculated as Pd metal and the weight of the total catalyst.
2. (Canceled)
3. (Previously Presented) A catalyst according to claim 1, wherein the support comprises alumina.
4. (Previously Presented) A catalyst according to claim 1, wherein the mean pore diameter lies within the range of 0.05 - 1 micron.
5. (Previously Presented) A catalyst according to claim 1, wherein the catalyst is in the form of shaped particles having a minimum dimension greater than 1mm.
6. (Previously Presented) A catalyst according to claim 1, wherein the lanthanide compound is a compound of cerium, gadolinium or lanthanum.
7. (Previously Presented) A catalyst according to claim 6, wherein the lanthanide compound is a compound of cerium.
8. (Canceled)
9. (Previously Presented) A catalyst according to claim 1, wherein the lanthanide compound is present at a concentration of 50 - 5000 ppmw based on the lanthanide metal and the weight of the total catalyst.

10. (Previously Presented) A catalyst according to claim 1, wherein the atomic ratio of Pd to lanthanide metal is in the range 1:0.5 - 1:3.5.
11. (Canceled)
12. (Currently Amended) A process for the hydrogenation of a hydrogenatable organic compound comprising the step of passing a mixture of a gaseous feed containing said hydrogenatable organic compound and hydrogen over a catalyst which consists essentially of a palladium compound supported upon a support material selected from the group consisting of titania, magnesia, alumina, silica-alumina, a calcium-aluminate cement and mixtures thereof and a compound of a lanthanide, wherein the palladium is present in the catalyst at a level in the range of 50 ppm about 1% by weight calculated as Pd metal and the weight of the total catalyst.
13. (Previously Presented) A process according to claim 12, wherein said hydrogenatable organic compound comprises an acetylenic compound.
14. (Previously Presented) A process according to claim 13, wherein said gaseous feed mixture contains a minor proportion of an acetylenic compound and a major proportion of an olefinic compound, in addition to hydrogen.
15. (Previously Presented) A process according to claim 14, wherein said gaseous feed mixture contains a minor proportion of acetylene and a major proportion of ethylene, in addition to hydrogen.
16. (Canceled)
17. (Previously Presented) A process according to claim 12, wherein the catalyst support comprises alumina.
18. (Previously Presented) A process according to claim 12, wherein the catalyst is in the form of shaped particles having a minimum dimension greater than 1 mm.

19. (Previously Presented) A process according to claim 12, wherein the lanthanide compound is a compound of cerium.
20. (Previously Presented) A process according to claim 12, wherein the lanthanide compound is a compound of cerium, gadolinium or lanthanum.
21. (Canceled)
22. (Previously Presented) A process according to claim 12, wherein the lanthanide compound is present in the catalyst at a concentration of 50 - 5000 ppmw based on the lanthanide metal and the weight of the total catalyst.
23. (Previously Presented) A process according to claim 12, wherein the atomic ratio of Pd to lanthanide metal in the catalyst is in the range 1:0.5 - 1:3.5